

Statement of
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I am pleased to appear before the Subcommittee today to discuss the programs and initiatives NASA has undertaken to address the Agency's human capital challenges, with a focus on those related to leadership and succession planning.

THE PROBLEM

NASA's history is marked by an impressive array of discoveries and advancements that have inspired and touched the lives of all Americans. None of those achievements, however, happened by chance. They were the result of management innovation, revolutionary technologies, solid science and research – and the combined skills, talents, and intellectual capabilities of the NASA workforce. As a premier research and development organization, we know that maintaining our proud tradition depends on our ability to attract, retain, and develop the best talent America has to offer.

As NASA Administrator Sean O'Keefe has stated before this and other Committees, the Agency faces a number of internal and external challenges in our ability to manage our human capital effectively and efficiently. Currently, more than twice as many NASA employees are over the age of 60 as are under the age of 30. With respect to the Agency's science and engineering (S&E) workforce, the ratio is closer to 3 to 1. One quarter of the current workforce will be eligible for retirement by 2007 and nearly half of all the current senior executives (SES) will be retirement-eligible by that time. These kinds of statistics are not unique to NASA; however, NASA's workforce challenge is exacerbated by the fact that S&E's make up approximately 60 percent of our workforce. NASA must compete for scientific, technical, and professional personnel in a labor market that faces significant declining numbers of scientific and engineering graduates and increased demand for these disciplines from the private sector. The Agency also requires a highly competent, skilled staff to support NASA's technical programs and address the Agency's financial, acquisition, and business management challenges.

SOLUTIONS

The Administration has made strategic management of human capital a top priority. Administrator O'Keefe and NASA senior leadership recognize the vital importance of a

strong, highly skilled workforce to successful achievement of the Agency's mission. Responsibility and accountability for effectively managing NASA's human capital resource are shared throughout all levels of the Agency. Strategic human capital management is everyone's business.

Strategic Human Capital Plan

A year and a half ago, NASA embarked on the development of a Strategic Human Capital Plan (SHCP). While the Agency had many human capital-related programs in place, senior leadership recognized that a more integrated, systematic, Agency-wide approach to human capital management was needed. NASA's human capital strategies are now integrated into and linked to NASA's mission, vision, core values, goals, and objectives through the SHCP and accompanying Strategic Human Capital Implementation Plan (SHCIP). These documents were developed not by the Agency human resources community but by a team of senior NASA managers, endorsed by Agency management, and approved by the Administrator.

As a basis for the Strategic Human Capital Plan, NASA embraced the Office of Management and Budget's PMA Human Capital Scorecard, the Office of Personnel Management's Standards for Success, and the General Accounting Office's Human Capital Self-Assessment Checklist. Using these as guides, an assessment was made of the Agency's human capital strengths and weaknesses. The resulting SHCP and SHCIP are structured around 5 Pillars: Strategic Alignment, Strategic Competencies, Learning, Performance Culture, and Leadership – with Leadership forming the foundation for all the others. Each pillar is aligned with specific goals, strategies, and improvement initiatives. Together, the SHCP and SHCIP provide a roadmap for specific actions and initiatives to ensure NASA has the right workforce today and for the future. They have been posted on the Web, hard copies have been provided to all Agency supervisors, and a tri-fold summary has been distributed to all employees. We have also been pleased to share our experience in developing NASA's Strategic Human Capital Plan, as well as copies of the SHCP itself, with several other Federal agencies.

Improvement initiatives identified in the SHCP include: developing and implementing an Agency-wide, integrated workforce planning and analysis capability, including an Agency competency management system; increasing the utilization of flexibilities and tools to ensure a highly skilled, diverse, and productive workforce; ensuring that training and development programs build on needed competencies, including more effective incorporation of knowledge sharing and mentoring in the development of employees; and ensuring that an integrated, strategic training and development program builds needed Agency leadership competencies. Our efforts are transforming the way we do business and we will continue to enhance and refine our human capital systems and programs in the coming years.

Enhanced Workforce Planning and Analysis and Competency Management System

Ensuring that you have state-of-the-art competence 10 years from now in areas you don't even know about today is a challenge. To help NASA meet this challenge, we have greatly improved our workforce planning tools and made them available via the web to managers and analysts at NASA Centers and in the Enterprises. For each organizational, occupational, and demographic segment of the workforce, we provide data on hiring, attrition, and on-board strength going back 5 years. Planners have attrition forecasts for the coming 5 years for all job and employee types.

Our new competency management system (CMS) – an important element of our enhanced workforce planning and analysis capability – identifies, manages, and reports the competency strengths and needs of the Agency. Prior to CMS implementation, NASA Centers identified competency needs on a Center or organizational basis, using locally descriptive definitions. With CMS, we now use a common set of definitions that feed an Agency-wide competency dictionary and an inventory of current workforce competencies. The system enables us to compare competency demands with the current knowledge base, assess competency strengths and weaknesses, and identify “at risk” competencies on an Agency basis. We can then use this information to drive recruitment, training, diversity, leadership, and succession planning. For example, competency assessments, along with other workforce planning data, have helped the Agency set priorities and target occupational areas for our corporate recruitment strategy.

Corporate Recruitment Strategy and Other Agency Initiatives

Programs such as NASA University Research Centers, the Undergraduate and Graduate Student Researchers Programs, and the Harriett G. Jenkins Pre-doctoral Fellowship Program help expand the number of students seeking degrees in science, technology, engineering, and mathematics (STEM) disciplines. These, along with NASA's equal opportunity programs, support the development of a diverse pool of individuals that possess the competencies NASA needs. The Science and Technology Scholarship Program, one of the legislative provisions currently being considered, would also enhance NASA's ability to draw from a pipeline of diverse talent.

NASA's Offices of Human Resources, Education, and Equal Opportunity are collaborating to connect these valuable programs to the Agency's recruitment efforts – most notably through NASA's new corporate recruitment strategy. The strategy is designed to augment our Center-based recruitment approach and leverage our Agency-wide resources to best effect. It features a 5-year action plan that: uses workforce analysis as a foundation for Agency-wide recruitment; targets critical workforce issues, such as diversity of the workforce and “at risk” competencies; strengthens our outreach to minorities and disabled persons and builds capacity by partnering with various organizations; and creates recruitment linkages between NASA's university research and education programs and Agency employment programs. We are now focused on stabilizing “at risk” competencies through targeted college and university recruiting. NASA managers were involved in developing the recruitment plan and are participating as recruiters and marketers at most recruiting events.

Our powerful automated hiring system, NASA STARS, enhances our ability to compete with private industry for top talent at college recruiting events. Students can apply online, and their applications can be rated electronically in a matter of minutes, so that recruiters are able to make virtually “on-the-spot” offers at recruiting events. The system also includes an automatic e-mail notification feature to permit those interested in employment with NASA to learn about positions opening in areas of interest to them and we provide web sites for student employment and research opportunities.

Leadership Development and Succession Planning

To ensure that NASA has a well-developed leadership pool for the future, the Agency has made leadership development and succession planning a priority. NASA’s approach is to attract and develop potential leaders who possess the competencies needed to meet future needs, who are aligned with our vision and mission, and who are focused on achieving results that matter to the American people. Seven explicit selection and performance criteria hold members of NASA’s Senior Executive Service (SES) directly accountable for performance results and for effective management of human capital. The criteria call for high performance by NASA leaders in terms of the President’s Management Agenda; the health of NASA; equal opportunity and diversity; collaboration; professional development; mission success; and fair and equitable, performance-based evaluation of employees. We select, promote, appraise, and reward senior executives based on these criteria. These requirements cascade down to non-SES supervisors and are being tailored and cascaded down to the rest of the workforce, thus ensuring that performance expectations for executives, supervisors, and employees are consistent, clearly communicated, and results-oriented.

NASA’s leadership development strategy has been implemented around the seven SES performance criteria. In addition to bringing in talent from the private sector into mid- and high-level positions, when needed, current employees are strongly encouraged to develop leadership competencies and skills, with the support of their supervisors, from their initial entry into the NASA workforce and throughout their careers. This comprehensive approach and the multitude of educational and experiential opportunities enable NASA employees to develop the competencies needed to meet future Agency needs while simultaneously fulfilling their individual objectives and aligning with the Agency’s strategic objectives.

NASA’s leadership development and succession planning efforts cascade from an overall NASA Leadership Model, developed internally using input from over 600 NASA managers and senior leaders. The Leadership Model is also aligned to the NASA Strategic Plan, the SHCP, and the PMA objective to “develop talent and leadership.” It ensures that our learning strategy for leadership and management development is integrated across the Agency, and it creates a framework for measurement and evaluation of the effectiveness of leadership development activities at the individual and organizational levels. The Leadership Model is comprised of six Performance Dimensions, which are families of competencies that represent measurable skills, knowledge or personal characteristics. These include Personal Effectiveness, Discipline

Competency, Business Acumen, Working Internationally, Managing Information and Knowledge, and Leading and Managing Others. These six Performance Dimensions guide the development of four levels of leaders – Influence, Managers/Supervisors, Senior, and Executives. The model also identifies training and development opportunities appropriate for achieving each competency.

The Leadership Model plays a pivotal role in NASA's succession planning strategy. It identifies the competencies that guide the curriculum of Agency-level leadership development programs. This approach ensures that NASA's current and future leaders are developed and trained in a consistent manner throughout the Agency. In addition to providing a consistent development strategy through the Leadership Model, NASA ensures systematic identification of the Agency's future leaders through the involvement and input from Agency and Center senior leaders on the priorities and needs of the Agency. This engages senior managers in the identification of future leaders and ensures the development of the right people at the right time.

NASA uses its leadership development programs as a succession planning tool so that the Agency's future leaders are equipped with needed leadership competencies in conjunction with their technical abilities. The following Agency leadership development programs develop potential and current leaders at grades 13 through Senior Executive Service (SES).

The NASA Fellowship Program targets GS 13 through SES. The Fellowship program is intended to provide "best in class" academic opportunities and aims to provide a means for top employees to gain leadership and management knowledge. The program offers a variety of academic opportunities to meet the different needs of leaders and employees. These opportunities vary greatly from one-week executive programs to year-long degree programs. A key value of a Fellowship is that it allows employees to be away from their daily Agency responsibilities and focus on learning.

NASA's Leadership Development Program (LDP) targets high performing leaders and focuses on developing both Agency-wide and government-wide understanding and perspectives. The LDP differs from the Fellowship Program in that the learning experiences are developmental – employees learn by doing. Developmental assignments occur over the course of a 12-month period in a variety of agency, governmental, or industry settings. The learning opportunities include developmental rotations, leadership workshops and coaching, training, executive briefings and benchmarking with outside leaders, and participation in an Agency-wide project examining programmatic and other change management issues that provide experience in realizing measurable results. Specifically, the NASA LDP is intended to prepare leaders for higher and broader roles and responsibilities upon completion of the program; to provide opportunities to obtain experiential understanding of Agency-wide, national, and global issues that impact NASA's mission and U.S. goals; to enhance understanding, effectiveness, and mobility across programs, projects, and Centers; to provide opportunities to participate and contribute while learning; and to create a culture of collaborative leaders who understand and focus on achieving valuable results that matter to the American people and to the

world.

The NASA Senior Executive Service Candidate Development Program (SESCDP) offers individuals a structured approach to preparing for recurring openings in the SES.

Designed to meet NASA's projected needs and management values as well as Office of Personnel Management Executive Core Qualifications, this program provides a series of intensive developmental experiences for people who are judged to have high potential for assuming executive responsibilities. These experiences, normally to be completed over a period of 12-18 months, include formal courses and seminars, work assignments, and individual mentoring from current SES members. These experiences are designed to build the leadership network of the SES corps and to develop leaders connected by personal relationships as well as by function and responsibility. These formal and informal relationships better unite the SES and serve to strengthen One NASA within the Agency.

In addition to the formal developmental aspects of NASA's succession planning strategy, we emphasize the need for more informal methods of leadership development. One such method is to increase broadening assignments to enable employees to collaborate and work in a One NASA way. For example, the SES Evaluation and Selection criteria place a renewed emphasis on professional development, mobility and collaboration and encourage NASA's current and future leaders to increase development opportunities at other NASA Centers and to work on ad-hoc Agency assignments.

NASA also ensures the development of future leaders by using coaching and mentoring as a means of transferring knowledge from experienced personnel to less experienced practitioners. We have recently identified coaching as a supervisory competency and have developed coaching and mentoring guides to enhance performance and to strengthen internal coaching capability of managers and supervisors.

Another aspect of NASA's succession planning strategy is a robust knowledge sharing initiative within the project practitioner community. NASA's Academy of Program and Project Leadership (APPL) aims to build and expand a knowledge sharing community of project practitioners within NASA and to capture and share lessons learned and best practices across all levels of project management proficiency. NASA partners with other government agencies, universities, and industry to share best practices and lessons learned through six knowledge sharing activities led by NASA's Academy of Program and Project Leadership—Leaders as Teachers and Mentors, Forum of Master Project Managers, Transfer Wisdom Workshops, Knowledge Sharing Workshops, the Project Management Shared Experiences Program, and *ASK Magazine*.

Leaders as Teachers and Mentors leverages the knowledge and experience of an identified set of current and retired Agency leaders and experts into a community of practice. The program gives formal recognition to leaders who give back to the Agency by sharing their expertise through guest lecturing, teaching, consulting, and mentoring.

The Forum of Master Project Managers is a unique opportunity for project managers from all NASA Centers and Enterprises to engage in face-to-face dialogue as they share knowledge across the Agency. At this program, project managers learn from fellow practitioners invited to tell stories about their experiences working on high-profile projects. In addition, experts from other federal agencies, academia, and industry share their innovative approaches to project management.

Transfer Wisdom Workshops are one-day workshops hosted by individual Centers in which project managers and team members engage in discussions of stories written by top NASA project managers. The Knowledge Sharing Workshop is a follow-up to the Knowledge Sharing Workshop where Center practitioners continue to learn from veteran managers as they share their own experiences.

The Project Management Shared Experiences Program is an annual conference where NASA project managers, engineers, and scientists, as well as senior executives from industry and international agencies gather to share project management initiatives and approaches, as well as best practices and lessons learned.

ASK Magazine is a bi-monthly journal that shares knowledge about project management through storytelling. Stories by veteran project managers inside and outside the Agency capture the triumphs and challenges of all types of projects, sharing best practices and lessons learned in an engaging format.

All of NASA's formal and informal methods of leadership development combine to create an integrated, strategic approach to succession planning. The involvement and input from Agency and Center senior leaders ensures that leadership development aligns with the priorities and needs of the Agency. NASA practices the continual identification of high-potential candidates through the analysis of workforce demographics and critical competencies. A leadership pool for the future is established through participation in structured leadership development programs, such as Fellowship Programs, the LDP, and the SESCDP. Most importantly, NASA is already seeing the results of its integrated succession planning strategy, as the pool of leaders developed through Agency leadership development programs is contributing to the staffing of senior leadership positions.

The NASA human capital programs and initiatives I have discussed today are designed to propel NASA to the forefront of contemporary "employers of choice" and to address leadership and succession planning challenges the Agency faces. While individually they can be powerful tools to address the Agency's workforce challenges, it is in integrating them with each other and with the Agency's mission, goals, and objectives that we will achieve the best results. Our efforts to date have paid off. The results of the most recent Government-wide survey demonstrate that we are already a Federal leader: we rank first in over 50 percent of questions pertaining to employee satisfaction.

NASA's vision and mission are about knowledge and discovery. Ultimately, however, accomplishing the mission is about people. We strive to be One NASA, where the whole

is greater than the sum of its parts, and where together we rise to the challenge of doing what has never been done before – as only NASA can.